

REMARKS

I. Status of the Application

At the time of the Action, Claims 1, 2, 4, 10, 11 and 13 were pending, Claims 5-9 and 14-16 having been withdrawn in response to an election of species requirement, and Claims 3 and 12 having been canceled. The Action rejects Claims 4 and 13 under Section 112. All pending claims stand rejected under Section 103(a). The issues raised in the Action are addressed hereinbelow.

II. The Section 112 Rejections

The Action states that Claims 4 and 13 depend from canceled claims. Applicant has amended Claims 4 and 13 above to address this error and requests that the rejection be withdrawn.

III. The Art Rejections

The Action rejects all claims under Section 103(a) based on Japanese Patent No. 11-145243 (JP243) in view of U.S. Patent No. 6,183,186 to Howells et al. (Howells). In rejecting Claims 1 and 10, the Action states that JP243 discloses a device for conveying wafer cassettes along a plurality of wafer processing devices aligned along an axis. The device is deemed to comprise:

- a horizontal conveyor (111) positioned adjacent to and below the plurality of process devices;
- a vertical conveyor (102) for raising the wafer cassette from the horizontal conveyor to the process device load port;
- a controller for automatically moving the various components of the overall system automatically.

The Action at page 3. The Action concedes that JP243 fails to disclose "an individual loading elevator for each process device." The Action then cites Howells as teaching a process device (12) with an individual loading station (10) comprising:

a housing;
an inlet in said housing for accepting transported wafer cassettes;
an elevator (20) for lifting and lowering wafer cassettes (16);
said elevator having two guides (102) mounted on the walls of said housing;
wherein said guides are actuated by a ball and lead screw assembly;
wherein each guide has a support assembly (120, 150) attached thereto and extending toward one another.

Id. at 3. The Action then states that:

[i]t would have been obvious to one of ordinary skill in the art, at the time of invention to provide the device taught by [JP243] with individual housings as taught by Howells et al. in order to decrease the amount of clean area the production facility will require.

Id. at 3-4. Based on these findings, the Action concludes that the subject matter of Claims 1 and 10 is unpatentable under Section 103(a).

In response, Applicant respectfully directs the Examiner's attention to amended Claims 1 and 10, reproduced below:

1. An apparatus for conveying a wafer container to a plurality of wafer processing stations, said processing stations being aligned in an x-axis direction and having a wafer inlet, said apparatus comprising:
a horizontal conveyor positioned adjacent and below the wafer inlet of each processing station and extending in the x-direction;
a vertical conveyor positioned adjacent the wafer inlet of each processing station and being configured to convey the wafer container substantially vertically along a z-axis between a position on the horizontal conveyor and the wafer inlet; and

a controller operably associated with said horizontal and vertical conveyors to control the position of the wafer container; wherein said vertical conveyor comprises:
a hollow housing positioned forward of the wafer inlet having side walls;
a pair of vertical translation members located on respective housing side walls; and
a pair of gripping arms mounted for vertical movement on respective vertical translation members and extending toward each other, each of the gripping arms configured to support a common wafer container.

10. An apparatus for conveying a wafer container to a plurality of wafer processing stations, said processing stations being aligned in an x-axis direction and having a wafer inlet, said apparatus comprising:

a horizontal conveyor positioned adjacent and below the wafer inlet of each processing station and extending in the x-direction;

a vertical conveyor mounted to the processing station and positioned adjacent the wafer inlet of each processing station and being configured to convey the wafer container substantially vertically along a z-axis between a position on the horizontal conveyor and the wafer inlet; and

a controller operably associated with said horizontal and vertical conveyors to control the position of the wafer container;

wherein said vertical conveyor comprises:

a hollow housing positioned forward of the wafer inlet having side walls;

a pair of vertical translation members located on respective housing side walls; and

a pair of gripping arms mounted for vertical movement on respective vertical translation members and extending toward each other, each of the gripping arms being configured to support a common wafer container.

Each of Claims 1 and 10 now recites that each of the gripping arms is configured to support a common wafer container. This configuration is exemplified in **Figure 15** of the specification, which illustrates gripper arms **502** on each side of a common wafer container **400**. Applicant does not find a pair of gripping arms that extend toward each other in Howell, and the Action

does not specify any structure of Howell that is intended to satisfy this claim element. Because this claim element is absent from the cited references, the Action has failed to provide a proper *prima facie* rejection under Section 103(a).

Moreover, Applicant respectfully submits that it would not have been obvious to the ordinarily skilled artisan to modify the Howell device to include a pair of gripping arms that extend toward one another and that are configured to support a common wafer container. The Howell device is not configured to receive a wafer cassette from an automatic conveyor; instead, it is configured to receive a manually loaded wafer cassette onto its platform **120**. The platform **120** supports the entire bottom surface of the wafer cassette (*see* **Figures 2 and 3** of Howell) and elevates it by lifting from underneath. Such a device could not be used with a typical conveyor, because there is no provision for removing a wafer cassette from the conveyor without interference (*i.e.*, if the platform **120** were used to lift a wafer cassette from a conveyor from underneath, it would interfere with the conveyor).

The device recited in amended Claims 1 and 10 can receive and lift a wafer cassette from a conveyor through the use of two gripping arms that extend toward each other and support the common wafer container from underneath. As shown, for example, in **Figures 13-16** of the specification, such a device can receive a wafer cassette from a horizontal conveyor with the gripping arms **502**, lift the cassette, and present the cassette for processing in a processing station. Neither JP243 nor Howell suggests that lifting the wafer cassette and presenting it to the processing station can be achieved or how to achieve it.


In view of the foregoing, Applicant respectfully submits that it would not have been obvious to the ordinarily skilled artisan to conceive the subject matter of amended Claims 1 and 10 based on the teachings of JP243 and Howell. Accordingly, Applicant respectfully requests that this rejection be withdrawn.

In re: Ki-Sang Kim
Application No.: November 4, 2003
Page 10 of 10

IV. Conclusion

Inasmuch as all of the outstanding issues raised in the Action have been addressed, Applicant respectfully submits that the application is in condition for allowance, and requests that it be passed to allowance and issue.

Respectfully submitted,

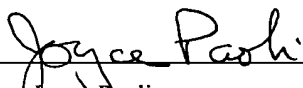

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